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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,853	10/23/2003	Steven M. Arnold	LEW 17,510-1	3668

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EXAMINER	
NGUYEN, XUAN LAN T	
ART UNIT	**PAPER NUMBER**
3683	

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/693,853	ARNOLD ET AL.	
	Examiner	Art Unit	
	Lan Nguyen	3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) *4,5 and 13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-12,14 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 October 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/23/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

- Species A figures 1-2, 4, 4A
- Species B figures 3, 3A, 4, 4A
- Species C figures 5, 4, 4A

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 12, 14 and 15 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. During a telephone conversation with Kent Stone on 6/9/04 a provisional election was made without traverse to prosecute the invention of Species A, claims 1-3, 6-12, 14 and 15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 4, 5 and 13 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description:"100C".

5. The drawings are further objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "417 and 417A".

6. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-3, 6-12, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (USP 6,095,295) in view of Johnston et al. (USP 6,318,522).

Park et al. show a magnetorheological device, as in the present invention, comprising: a generally cylindrically shaped housing 113 having cylindrical walls and a divider 115 within said housing; said housing includes an integral end portion 121 and an end plate, not numbered but shown with the bolts on top of figure 1, removably attached to said cylindrically shaped housing; a rotary impeller having a paddle 112 mounted within said housing, said rotary impeller sealingly engaging said divider, said paddle in combination with said cylindrical walls, said divider, said integral end portion of said housing, and said end plate of said housing form a first chamber 116 A and a second chamber 116B, a magnetorheological fluid residing in said chambers; a passageway 125-129 interconnecting said first and second chambers; and, a coil 122 surrounding a portion of said passageway enabling the viscosity of the magnetorheological fluid to be varied, see from column 3, line 67 to column 4, line 11. Park lacks a second paddle in the structure of the rotary impeller. Johnston et al. teach the concept of varying the number of paddles from one to a multiple of paddles in column 3, lines 2-7. Specifically, Johnston shows in figure 2, a magnetorheological device with 2 paddles 26, 27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Park's magnetorheological device to have comprised two paddles as taught by Johnston to further increase the adjustability of the damping capability of the device.

Re: claims 2 and 3, the Examiner takes an Official Notice that it is old and well known that electric currents can be either a direct current or an alternate current and

would have been within a routine for one of ordinary skill in the art to have employed a direct current or an alternate current for use with the coil.

Re: claims 4 and 5, Park shows said passageway is interior to the housing 113 in sections of 128, 129 and exterior to the housing 113 in sections 125-127.

Re: claims 8, 9 and 11, Park further shows seals 135-138 in figures 2 and 4 and in column 4, lines 22-40 as claimed.

Re: claim 10, Park shows said passageway 125-120 to be a tortuous path.

Re: claims 12 and 14, the discussion of the rejection of claim 1 meets all the limitations of claims 12 and 14.

Re: claim 15, Park shows magnetorheological device, as in the present invention, comprising: a housing 113 having a divider 115 extending inwardly from said housing, a hub 111 having a first impeller 112 rotatably mounted within said housing; said first impeller straddling said divider, as shown, a first chamber 116A formed by said first impeller and said divider and a second chamber 116B formed by said first impeller and said divider, a passageway 125-129 interconnecting said first and second chambers, magnetorheological fluid in said chambers and said passageway; a magnetic field generated by a coil 122 in proximity to said passageway such that an increase in said field increases the viscosity of the magnetorheological fluid, see from column 3, line 67 to column 4, line 11; said magnetorheological fluid in said passageway being solidified upon application of a sufficient magnetic field thereto forming a plug in said passageway; said hub and impellers rotatably pushing said magnetorheological fluid against said divider and said plug such that said magnetorheological fluid is in

compression. Park lacks a second paddle in the structure of the rotary impeller. Johnston et al. teach the concept of varying the number of paddles from one to a multiple of paddles in column 3, lines 2-7. Specifically, Johnston shows in figure 2, a magnetorheological device with 2 paddles 26, 27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Park's magnetorheological device to have comprised two paddles as taught by Johnston to further increase the adjustability of the damping capability of the device. Note that, as modified, Park's second chamber would be formed by the second paddle and the divider. Note also that Park is silent of the magnetorheological fluid forming a plug. Park does disclose that the viscosity of the fluid is proportional to an intensity of the magnetic field. It is considered a design choice to have intensified the magnetic field to the point of solidifying the fluid to form a plug and would have been obvious to one of ordinary skill in the art at the time the invention was made to have done so in order to encompass a wide range of dampening from a minimum to a maximum capacity of the device.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rennecke et al. is cited for a magnetorheological damper using a permanent magnet 25 to increase the viscosity of the fluid. Barwick is cited for a magnetorheological damper with two paddles and its operation as described from column 5, line 45 to column 6, line 5.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Nguyen whose telephone number is 703-308-8347. The examiner can normally be reached on M-F, 8 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lan Nguyen 6/10/04
Lan Nguyen
Patent Examiner
A. U. 3683